10

15

5

U.S. Appln No. 10/044,526 Page 2

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1. (currently amended) A heat-emitting burner element for use with at least one processing device of a fuel cell system performing an endothermic process, e.g., with an endothermic stage of a referming unit where the burner element consists of comprising: at least two plates arranged essentially parallel to each other and at a distance from each other, characterized by the fact that and wherein the plates form a reaction gap between themselves therebetween and, as a result of the catalytic combustion of a fuel gas/oxygen mixture there on a catalytic coating provided on at least one of the plates and facing the reaction gap, generate heat and emit # the heat by radiation, convection and conduction directly through the coated plate(s) to at least one neighboring endothermic stage and that at least one of the plates displays comprises structural elements also having a catalytic coating being covered with a catalyst coating and the structural elements extending into the reaction gap and wherein the height of each of the structural elements is less than the reaction gap., which runs in the flow direction, which structural elements are if necessary in rows arranged transversely to the direction of flow and offset with respect to each other and consisting, for example, of fins or bars.
 - 2. (currently amended) A burner element as in claim 1, characterized by the fact that the element is essentially four sided in top view, e.g., square, rectangular or trapezoidal, that wherein at least one of the structural elements comprises a four-sided element and wherein the reaction gap displays provides an inlet and an outlet on the first and second opposite sides of the four-sided element so that the fuel gas/oxygen mixture flows in a flow direction from the inlet on the first side to the outlet on the second side.

U.S. Appln No. 10/044,526 Page 3

313-665-4977

- 3. (currently amended) A burner element as in claim 1 characterized by the fact that wherein the plates forming the reaction gap are of wavelike shape, with the peaks and valleys forming the longitudinal direction of the wave form extending in the flow direction of the fuel gases.
- 4. (currently amended) A burner element as in claim 3 characterized by the fact that wherein the waveform is a rectangular or square wave.
- 5. (currently amended) A burner element as in claim 2 characterized by the fact that wherein a device for introducing diluting air transversely to the direction of flow is provided at least in one and preferably in several places place along at least one of the also oppositely positioned third and fourth sides of the element.
- (currently amended) A burner element as in claim 5 characterized by the fact that wherein the device is designed for introducing diluting air in order to introduce is the air perpendicular to the flow direction of the combustion gases fuel gas/oxygen mixture through the reaction gap.
- 7. (currently amended) A burner element as in claim 5 characterized by the fact that the further comprising: a catalytic combustion chamber defined by the reaction gap, and wherein the catalytic combustion chamber is subdivided in the flow direction into several structured sections with the device for introducing diluting air having air openings which in each case are arranged between the neighboring sections following one another.
- 8. (currently amended) A burner element as in claim 7 characterized by the fact that between two neighboring consocutive sections in each case wherein a distance is provided between two neighboring consecutive sections in the region of the air openings which is at least essentially free of structural elements.
 - 9. (canceled)

5

5

U.S. Appln No. 10/044,526 Page 4

- 10. (currently amended) A burner element as in claim 7 characterized by the fact that wherein between the two above mentioned plates on their edge regions, spacers are provided and wherein the air openings are provided at a location including at least one of in the spacers and between the spacers in which or between which the above noted air openings are provided.
- 11. (currently amended) A burner element as in claim 1 characterized by the fact that the wherein two above noted plates form on their respective surfaces facing away from each other a part of an endothermic stage or a reforming unit.
- 12. (currently amended) A burner element as in claim 11 characterized by the fact that wherein the above noted surfaces of the plates facing away from each other are also structured and may be coated with <u>further comprises</u> with a catalyst also coated on the surfaces.
- 13. (currently amended) A burner element as in claim 2 characterized by the fact that wherein the inlet communicates with a feed channel for the fuel/oxygen mixture arranged in an edge region on the first side of the element and extending perpendicular to the reaction gap.
- 14. (currently amended) A burner element as in claim 13 characterized by the fact that the outlet communicates with an outflow channel arranged on the second elde of the rectangular element and extending perpendicular to the reaction gap 1 and wherein a plurality of the structural elements comprises a fin shaped structure, a bar shaped structure, and a U-shaped structure.
- 15. (currently amended) A burner element as in claim 2 characterized by the fact that wherein the inlet communicates with several feed-in passages which guide the fuel/oxygen mixture to different places in the reactor gap along the first side and thus assure a uniform distribution of the fuel/oxygen mixture over the width of the reactor gap.

5

5

U.S. Appln No. 10/044,526 Page 5

- 16. (currently amended) A burner element as in claim 15 characterized by the fact that wherein the outlet communicates with several collecting passages which collect the exhaust gases from the reactor or the reaction gap at various places along the second side and feed it the exhaust gases to the outflow channel.
- 17. (currently amended) A burner element as in claim 15 characterized by the fact that the feeder wherein the feed-in passages and the collecting passages are rectangular in each case and are arranged side by side [5] so that the distance in each case between the a mouth of one of the feeder feed-in passages and the inlet to the collecting passage lying opposite # thereof is always the same.
- 18. (currently amended) A burner element as in claim 1 wherein a plurality of the structural elements comprises a fin shaped structure. 11-characterized by the fact that the two plates together with the other plate shaped elements of the fuel processing system of the reformer unit are stacked into a stack and the plates or the other plate shaped elements are welded together on their four sides to form the stack
- 19. (currently amended) A burner element as in claim 1 wherein a plurality of the structural elements comprises a U-shaped structure. 7 characterized by the fact that the combustion chamber is subdivided into three structured sections and that on at least one of the opposing third and fourth sides two openings are provided for introduction of air

U.S. Appln No. 10/044,526 Page 6

20. (canceled)

313-665-4977

- 21. (canceled)
- 22. (canceled)
- 23. (canceled)
- 24. (canceled)
- 25. (canceled)
- 26. (canceled)
- 27. (canceled)
- 28. (canceled)
- 29. (canceled)
- 30. (canceled)